REMARKS

Applicant acknowledges with appreciation the withdrawal of the previous rejection and the prosecution progress which this represents.

Reconsideration of presently solicited method Claims 21 to 40 respectfully is requested. For the reasons indicated in detail hereafter, the new grounds for rejection expressed in the Official Action of August 7, 2006 are urged to be similarly lacking sound technical and legal bases. A *prima facie* showing of obviousness should be found to be lacking in the reasonably derived teachings of the presently cited references taken alone or in combination as discussed below.

Applicant has provided an attractive integrated method for preparing mechanically defibered bleached wood pulp which can appropriately be characterized as an advance in the art. The strongly alkaline alkali metal aluminate (e.g., sodium aluminate) utilized in combination with peroxide during the bleaching step is efficiently recovered as ash following combustion in the absence of the formation of a melt and while dissolved in water and is efficiently recycled to the bleaching step for reuse. It further has been found that the hydrogen peroxide bleached mechanical pulp prepared in accordance with the process of the present invention darkens at a slower rate when exposed to light than when bleached in the presence of sodium hydroxide. Accordingly, the product is improved. The presently claimed process is representative of the type of progress in the useful arts that the U.S. Patent System was designed to promote and deserves recognition.

In an effort to expedite prosecution, the word "improved" has been removed from independent Claim 21. Nevertheless, advantages over the prior art are apparent from a reading of Applicant's Specification and the data presented therein.

Accordingly, the withdrawal of the formal rejection under 35 U.S.C. §112, second paragraph, is urged to be in order and is respectfully is requested.

The continued rejection of presently solicited Claims 21, 22, 27, 28, and 38 to 40 under 35 U.S.C. §103(a) over newly cited U.S. Patent No. 6,364,999 to Speaks et al, in view of Admitted Prior Art (Specification at Pages 2 and 3), Rydholm, Batchelor, and U.S. Patent No. 4,116,759 to Janson would be inappropriate. This rejection is urged to be characterizable as an impermissible quintessential hindsight reconstruction of different reference teachings from the prior art while using Applicant's teachings as instructions for their first time combination. Also, Applicant's improved results resulting from the practice of the process are not described or even remotely suggested in the reference teachings.

Speaks et al. is directed exclusively to a different method for preparing mechanically defibered wood pulp comprising mechanically defibering wood chips to form wood pulp, and bleaching the wood pulp with peroxide. There is not contemplated a washing step with water nor any chemical recovery during the production of the mechanically defibered bleached wood pulp there described. Speaks et al. mentions briefly that the bleached wood pulp is charged to a screen for removing an oversized fraction to be returned to a refiner, and the screen undersize portion passes through to a cleaning stage and thence to a thickener. It is only in connection with a chemical pulping process that Speaks et al. refers to chemical recovery from a spent cooking liquor. A chemical recovery of any type from a bleaching process is not contemplated. At the bottom of Page 5 and the top of Page 6 of the Official Action, reference is made to Col. 29, lines 20 to 22 of Speaks et al. This teaching of Speaks et al. is exclusively with reference to the extraction of wood

chips with alkaline/peroxide chemicals wherein the chips are then dried to approximately 8% moisture content before they are refined in a thermo-mechanical pulping system. This is not a bleaching process as presently claimed. At the top of Page 6 of the Official Action, reference is made to Col. 4, lines 16 to 20 of Speaks et al. "sodium aluminate" is identified. It should be acknowledged that this reference concerns exclusively a previously employed technique where sodium aluminate is used as an additive in a mechanical pulping process in an effort to prevent pitch deposition onto equipment surfaces. There is no indication that sodium aluminate is ever to be recovered from a spent liquor or used to produce alkaline conditions during bleaching with peroxide. Accordingly, the different technology of the primary reference is unlike Applicant's specifically defined contribution in a number of respects.

The Admitted Prior Art with respect to a Canadian plant which produces bleached chemi-mechanical refiner (CTMP) pulp from aspen wood does not remedy basic shortcomings of any of the cited references. There, impregnation is carried out with a sodium sulfite solution and bleaching is carried out with alkaline peroxide. The spent liquors from both steps are concentrated by evaporation and the concentrated liquor is combusted in a recovery boiler. The organic material is combusted to CO_2, and the spent sodium and sulfur chemicals are reduced to a melt of Na_2S and Na_2CO_3. The melt is cooled and stored for a possible undisclosed further use. This clearly is not the concept of Applicant's specifically defined integrated method for preparing mechanically defibered bleached wood pulp.

The Admitted Prior Art and Batchelor (1976) with respect to the dissimilar Sonoco process are already discussed at Page 3, lines 6 to 24 of Applicant's

Specification. A Na_2SO_3 solution is used as the active chemical in a pulping process. Chemical recovery is carried out by adding aluminum hydroxide to the evaporation process prior to final concentration. Recycled sodium aluminate is added to the strong spent liquor and the mixture is pelletized. The pellets are next combusted in a rotary recuperative furnace where the discharge end is at a temperature above 900°C. Reducing conditions are maintained at the interior of the pellets and the sulfur of the spent liquor is reduced to sulfide, and simultaneously the sodium and aluminum form a stable sodium aluminate having a high melting temperature (e.g., 1600°C). The sulfur which is released from the pellets is immediately oxidized to SO_2. A portion of the pellets is crushed and is recirculated to the pelletization of the strong spent liquor. The remaining portion of the pellets is dissolved and the water-soluble sodium aluminate and the water-soluble sodium aluminate forms a strong alkali liquor. The SO_2 of the flue gases is absorbed into this liquor, Na_2SO_2 is formed, and aluminum hydroxide precipitates. There is absolutely no teaching or even remote suggestion of the use of sodium aluminate in the pulping process or in the bleaching process as presently claimed. Instead, Na_2SO_3 is reused for impregnation of chips in a continuous digester and aluminum hydroxide is added to the evaporation phase of the spent liquor. Had Applicant's contribution been rendered obviously apparent from such old teachings, it long ago would have been described in the technical literature and practiced by others. The reasonably derived teachings alone or in combination do not reveal Applicant's specifically claimed contribution.

Rydholm (1976) falls far short of contemplating Applicant's specifically defined sequence of process steps. Regardless of the terminology used by others, Applicant

has provided an attractive method for preparing mechanically defibered bleached wood pulp. No chemical pulping is described by Applicant or is contemplated. No integrated process involving bleaching of wood pulp with peroxide under alkaline conditions in the presence of an alkali metal aluminate combined with Applicant's other process steps is even remotely suggested by Rydholm. Had Applicant's contribution been rendered obviously apparent from such old teachings, it long ago would have been described in the technical literature and practiced by others. The withdrawal of the rejection is in order and is respectfully requested.

Basic deficiencies in the technology of Janson previously are identified in the "Remarks" portion of Applicant's submission of May 19, 2006. Although Janson discloses a method for recovering pulping or bleaching chemicals from spent liquor by concentrating and combusting the spent liquor and dissolving the non-volatile residue, ash or melt depending upon temperature, the author exclusively contemplates a recovery process involving recovery of the sodium borate or sodium phosphate that was used as a pulping and/or bleaching chemical in alkaline pulping or bleaching process. The fact that Janson teaches a combustion temperature of 200°C. to 1,500°C. when NaH_2BO_3 or Na_2HBO_3 are used as the active ingredient in oxygen bleaching indicates that Janson does not actively seek to prevent recovery of sodium borate as a melt and is thereby defining a complicated and expensive recovery process particularly when practiced on a commercial scale. The sodium borate salts are intended to actively participate in the delignification of the pulp and these are emphasized throughout the teachings of Janson including the claims. See the chemical formula at Col. 2, line 13 in this regard. While Janson very briefly mentions that other salts of other amphoteric electrolytes, such as silicates and

aluminates might be used analogously, there is no indication how such materials could be used to advantage in an integrated method for preparing mechanically difibered bleached wood pulp as in specifically claimed by Applicant. Also, there is no indication of the improved results made possible by Applicant. A recognition of the basic deficiencies in the teachings of Janson is urged to be in order.

Similarly, the continued rejection of presently solicited Claims 23 and 24 under 35 U.S.C. §103(a) over the reasonably derived teachings of Speaks et al., Admitted Prior Art (Specification at Pages 2 and 3), Rydholm, Batchelor, Janson, and further in view of the deficient teachings of U.S. Patent No. 4,388,148 to Yahrmarkt et al. would be unsound. Basic deficiencies of the reference teachings other than Yahrmarkt et al. are previously discussed. A broad desire to reduce energy consumption does not reveal or suggest through any stretch of the imagination Applicant's specific combination of process parameters. It readily is acknowledged as confirmed by Yahrmarkt et al. that sodium aluminate has been proposed for use in the prior art during the mechanical refining of pulp. It must be recognized, however, that Yahrmarkt et al. just as the other publications contains no teaching or suggestion of Applicant's overall integrated process as presently claimed for preparing mechanically defibered bleached wood pulp wherein an alkali metal aluminate, such as sodium aluminate, is utilized in the peroxide bleaching step, is effectively recovered as ash, is dissolved in water, and is efficiently recycled to the bleaching step. Applicant's specifically claimed process is not taught or fairly suggested. Even if the reference teachings were reasonably combined, Applicant's contribution still would result. The withdrawal of the rejection is urged to be in order and is respectfully requested.

Likewise, the continued rejection of Claims 25, 26, 30, 32 to 34, 36, and 37 under 35 U.S.C. §103(a) over the real teachings of Speaks et al., Admitted Prior Art (Specification Pages 2 and 3), Rydholm, Batchelor, Janson, and further in view of the inadequate teachings of U.S. Patent Publication No. 2004/0040679 to Kilgannon et al. would be lacking in justification. Basic deficiencies of the reference teachings other than Kilgannon et al. are previously pointed out. Reference to pH and temperature in a different overall processes does not remedy such basic deficiencies. Even if the reference teachings were reasonably combined, Applicant's specifically claimed process and the results which are made possible still would not be rendered obviously apparent. The withdrawal of the rejection is in order and is respectfully requested.

Further, the continued rejection of presently solicited Claim 29 under 35 U.S.C. §103(a) over the inadequate teachings of Speaks et al., Admitted Prior Art, Rydholm, Batchelor, and Janson further in view of the reasonably derived teachings of the old U.S. Patent No. 3,396,076 to Crosby et al. would be inappropriate. Basic shortcoming of the references other than Crosby et al. are previously discussed. The concentration of an effluent in a different Kraft pulping process does nothing to remedy the deficiencies of the other references. Even if all of the reference teachings were reasonably consulted, Applicant's specifically claimed contribution still would not result. The withdrawal of the rejection is in order and is respectfully requested.

Finally, the continued rejection of presently solicited Claim 31 under 35 U.S.C. §103(a) over the different teachings of Speaks et al., Admitted Prior Art, Rydholm, Batchelor, Janson and Yahrmarkt further in view of Kilgannon et al. would be

similarly lacking a found basis. The deficiencies of each of these reference teachings are previously discussed. Reference to temperature in a different context does not reasonably suggest the subject matter of dependent Claim 31, which includes all of the limitations of claims from which it depends. More than a hindsight rearrangement and reconstruction of words taken out of context from different publications while using the instructions of Applicant's Specification is required in order to establish a proper *prima facie* showing of obviousness. The withdrawal of the rejection is urged to be in order and is respectfully requested.

It respectfully is submitted that a *prima facie* case for the obviousness of the presently claimed subject matter respectfully is absent in the reasonably derived teachings of the references. To establish *prima facie* obviousness of a claimed invention, all of the claim limitations and their combination must reasonably be taught or suggested in the prior art. They are not. See in this regard M.P.E.P. §2143.3 citing In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in the claim must be considered when judging the patentability of the claim against the prior art". In re Wilson, 424 F.2d 1342, 165 USPQ 494 (CCPA 1970). It is not sufficient as a matter of law that words can be found in different contexts by the Examiner after a reading of Applicant's teachings when they are not combined or reasonably suggested to be combined by the authors of the references. Similarly, all possible numbers are present on a dial of a safe; however, their specific combination to achieve a unique result is not obviously apparent even following detailed observation in the absence of guidance from the manufacturer.

The mere allegation that the differences between the claimed subject matter and the prior art are obvious does not create a presumption of unpatentability. See

In re Soli, 317 F.2d 941, 137 U.S.P.Q. 979 (CCPA 1963). Obviousness must be predicated on something more than it would be obvious "to try". See Ex Parte Agrabright et al., 161 U.S.P.Q. 703 (POBA 1967), and In re Mercier, 515 F.2d 1161, 185 U.S.P.Q. 774 (CCPA 1985). It is well-established law that patentability determinations of this type are contrary to the statute. See In re Antonie, 559 F.2d 618, 195 U.S.P.Q. 6 (CCPA 1977); In re Goodwin et al., 576 F.2d 375, 198 U.S.P.Q. 1 (CCPA 1978); and In re Tomlinson et al., 363 F.2d 928, 150 U.S.P.Q. 623 (CCPA 1966).

If there is any remaining point that requires clarification prior to the allowance of the Application, the Examiner is urged to telephone the undersigned attorney so that the matter can be discussed and promptly resolved.

Respectfully submitted,

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